

BACKWARDS RUNNING



by
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***Details the many benefits of backwards running**

***Shows you how to run backwards, how to include the exercise into your own workouts, and much more!**

FOREWORD

Backwards running is a fantastic way to train your body and is outstanding for physical conditioning. It develops your cardiovascular system and strengthens muscles throughout your entire body.

As a track and football coach at Fullerton College, I have my players do a lot of backwards running. Thirty years ago I first learned how to run backwards; I regard that as one of the greatest experiences of my life. Today I still run backwards to keep in shape .

One problem for athletes, coaches, and the public has been that there's been nothing written about backwards running. There are no books describing to the fullest extent the benefits of backwards running; there are no books instructing you how to run backwards. There's definitely a great need for such a book; for once one learns how to run backwards, and practices the exercise regularly, he will gain superior physical health, strength, and stamina.

The only research on backwards running that I'm aware of has been conducted by Dr. Robert Stevenson. He's done a tremendous job of compiling all kinds of information about backwards running into this book. Not only that, but Dr. Stevenson has now fulfilled the public's need for a comprehensive book on backwards running. Dr. Stevenson shows that many sports champions and professional athletes do backwards running drills as part of their daily regimen; he also shows you how to run backwards, and how to incorporate backwards running into your own workouts. For these reasons and many others I believe that everyone should become aware of this book!

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INTRODUCING BACKWARDS RUNNING

The secret is out: there's a new way to run and jog which you can start benefiting from today. This new form of exercise is *backwards running*. For years backwards running has been practiced by a small but dedicated group of athletes. Many of these athletes are now champions in their respective sport. That this is so is no accident; for athletes who have incorporated backwards running into their workouts almost unanimously agree that the exercise gets you in super condition, and saves you time in doing so. This fact is very important since too many people—athletes and non-athletes alike—are not in good enough physical condition to enjoy life and sports the way they should. Such people often feel sorry for themselves, and will frequently complain to anyone who will listen about all their aches and pains and illnesses. Sometimes the negative atmosphere these people seem to love to create gets so overwhelming that no one within hearing distance can escape the depressing effects. One effective way, however, for you to rise above all this negativism and avoid the rut which produces it is to take up backwards running.

Backwards running, by vastly improving your physical condition, allows you to better achieve your full athletic potential. It also provides you with more energy and pep, which boosts your morale as well as freeing up more time for enjoyable living. On top of all this, backwards running restores balance to your body. Athletes who only rely on forwards running to get in condition invariably pay the price; they overdevelop certain sets of muscles, especially the hamstring (the muscle located on the backside of the leg between the knee and hip). An overdeveloped hamstring throws the body out of balance, and often leads to serious knee injuries, muscle pulls, swayback condition, persistent lower back pain and stiffness, and other physical problems. Backwards running, though, exercises complementary muscles to the hamstring; this promotes stronger muscle connections, increased stamina, quickness, improved posture—in short, all facets of your physical condition achieve greater perfection and a more harmonious state of balance.

An important point to keep in mind is that running backwards or backpedaling is a required foot movement in many sports. For example, outfielders and infielders in baseball backpedal for fly balls or pop-ups; basketball players backpedal on defense, especially when defending against

the fast break; boxers backpedal to avoid punches; cornerbacks in football run backwards to cover the receiver. Athletes in these sports and several other sports who cannot run backwards and backpedal with proficiency in those situations which call for this foot movement are not likely to succeed. When viewed in this light, backwards running is not only beneficial, but essential.

The evidence in favor of backwards running is conclusive: anybody seriously interested in improving his athletic performance, physical condition, and outlook on life would do well to take a close look at backwards running and its benefits. Let us therefore move on to a consideration of the basic backwards running technique.

THE TECHNIQUE OF BACKWARDS RUNNING

Before we investigate the numerous benefits of backwards running, we should see what backwards running entails and how one goes about running backwards. The basic backwards running technique is quite easy to master. Simply run in place; then, impart a slight backwards momentum, and you're now on your way! When you run backwards, your body will be more erect than when you run forwards. Your shoulders will be drawn back, you'll hold your head up, and your back will be straight. You'll quickly notice that this posture you adopt while running backwards is far superior to the slumpy posture you often assume while running forwards.

Backwards running is like sprinting in a couple of ways: for one thing, it tires you out very quickly; for another, you run only on your toes and don't land on your heels. The traditional heel-to-toe foot strike which occurs during forwards running has been criticized by doctors because of its jarring impact, resulting in all sorts of injuries. This criticism is not unjustified. For example, several studies report that 33% of all runners have been sidelined with "runner's knee." In fact, it's almost unheard of for any serious runner to have never suffered a debilitating foot injury. It's for this reason that many doctors recommend that you take up walking or, if you are absolutely impelled to run, sprinting. They assert that sprinting leads to fewer injuries and is less jarring because the runner is on his toes. A little experimentation on your own should confirm this; you can really feel your back and spine compress when you run heel-to-toe, as well as the constant jolting on the knees. By contrast, you hardly feel anything when you run on your toes. If sprinting leads to fewer injuries, backwards running must be considered an even safer form of exercise. Backwards running is done at a much slower pace than sprinting; and, this slower pace virtually eliminates the occurrence of muscle pulls and tears, which are the bane of sprinters.

Many people wonder if backwards running is dangerous, since you can't see what's behind you. The answer is "not if you take the proper precautions." In general, it's safest to run backwards in thick grass at a park or in the soft sand at the beach. If by chance you stumble and fall, it's doubtful you'll be hurt when you land in the grass or the sand.



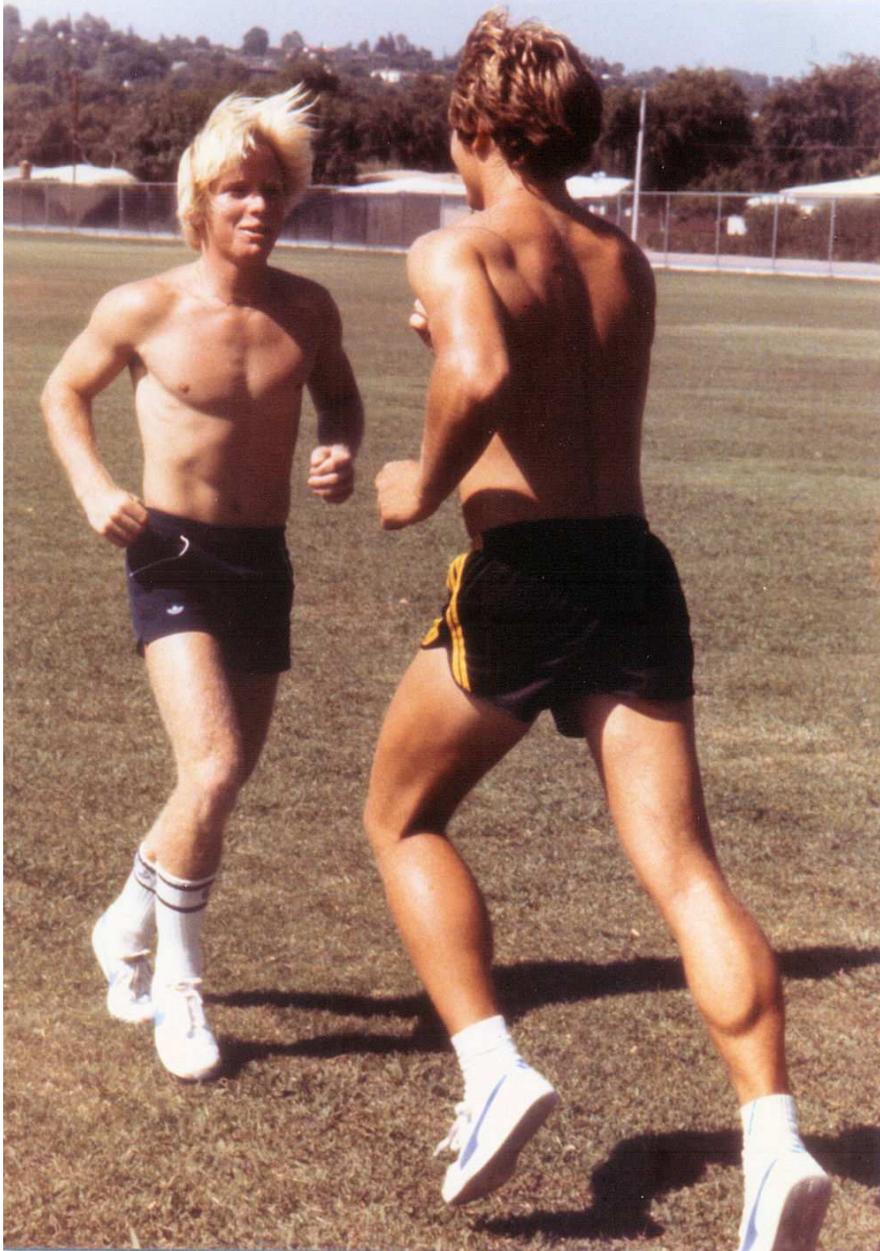
Ed Schultz spots for backwards-running Marylin Palmer. By running with a partner, you can run safely and not worry about tripping over unseen objects. (Dr. Stevenson photo)

I do not recommend you run backwards in the street. Cars have a way of sneaking up on you. Too many runners and joggers are killed every year as it is. If you can't find a good park, and the beach is too far away, then go to a local track. It's best to run backwards in the outside lanes. You'll be out of the way of the regulars, and the curves will be easier to negotiate.

No matter how safe the running conditions, it's wise to frequently look over your shoulder when running backwards. You'll find that this precaution saves you from a lot of potential falls, and is easy to execute. You can look over your shoulder without breaking stride.

The surest way to eliminate worries about tripping and falling down while running backwards is to enlist the aid of a partner. While you run backwards, have your partner run forwards and keep an eye out for possible hazards. If you want, do this for a while, and then switch roles: you run

forwards and be the scout while your partner runs backwards. Not only does this make running backwards safer, but also running with a partner adds a lot of fun to the workout.



Backwards running sprint drills are a great way to get in shape. Roger Shepard (left), paced by friend Brent Blevard, does such drills regularly. Shepard says these drills have provided him more quickness and endurance, making it possible for him to win many tennis tournaments. (Dr. Stevenson photo)

BENEFITS OF BACKWARDS RUNNING

1. *BUILDS STAMINA*—For years backwards running has been a favorite training exercise of boxers. One reason for this is because backwards running really gives the cardiovascular system a workout; and this is exactly what a boxer wants if he's to develop the necessary stamina to last 10 or 15 tough rounds.

The great undefeated heavyweight boxing champion of the 1920s, Gene Tunney, trained for his fights by running backwards for miles, throwing jabs the whole way. As reported in the *Los Angeles Times* (November 8, 1978), “the secret of Tunney's success was that he was a thinking fighter, with a carefully devised plan. Tunney worked out by running backwards for miles while zinging the left jab, and the practice served him well.” How many miles Tunney ran backwards was indicated in an article appearing in the *New York Times* (Sept. 19, 1926): “each morning he strides out through the country, jogging and shadow boxing for four, six, or sometimes eight miles.” This regimen made Tunney the most finely-conditioned boxer of his era. Before his first title fight against the reigning champion Jack Dempsey, Tunney was examined by Dr. Abe Baron of the Pennsylvania State Athletic Commission. Dr. Baron proclaimed Tunney a “physical machine.” The observations of Richard Vidmer, the *New York Times* reporter covering the Tunney training camp, reinforce Dr. Baron's analysis. Vidmer noted on Sept. 20, 1926, just a few days before the title fight, that Tunney “ran four and a half miles on the road this morning and at the end of the journey was hardly blowing and not at all weary.”

The first Dempsey-Tunney title fight saw “Gentleman Gene” coming in a 3 to 1 underdog. Dempsey, the “Manassa Mauler,” was noted as a puncher who could knock you out with one blow. But, the champ proved helpless in the face of Tunney's remarkable physical condition and superb boxing skills. As the *Times* reported: “Through every round of the ten, Tunney battered and pounded Dempsey. He rained rights on the tottering champion's jaw and he bewildered Dempsey with his speed and the accuracy of a whip-like left hand which Dempsey could not evade. He was complete master, from first bell to last. He out-boxed and out-fought Dempsey at every turn. At the finish Dempsey was a sorry, pitiful subject, the object of the sincere sympathy of the crowd. His mouth and nose

spouted blood; his left eye, bruised and battered, was closed tight and bleeding. And he was all in all, absolutely at the end of his tether.”

It's interesting to note that Dempsey was also examined by Dr. Baron before the fight. Dr. Baron, stated the Times, “found the champion in excellent condition, but not quite as far along in his training as Tunney.” It's very likely Tunney's doing the miles of backwards running proved the winning edge, and a substantial edge at that it turned out. But, we'll come back to Tunney's backwards running routine, and the benefits it conferred on him, later on in the section on boxing. For now it's important to understand that even a small amount of backwards running qualifies as aerobic training, which helps you build your stamina and endurance. The health-promoting features of aerobic training are specified in Dr. Kenneth Cooper's *The New Aerobics*, and can be summarized as follows:

1. Aerobic training strengthens the muscles of respiration and tends to reduce the resistance to air flow, ultimately facilitating the rapid flow of air in and out of the lungs.
2. It improves the strength and pumping efficiency of the heart, enabling more blood to be pumped with each stroke. This improves the ability to more rapidly transport life sustaining oxygen from the lungs to the heart and to all parts of the body.
3. It tones up muscles throughout the body, thereby improving the general circulation, at times lowering the blood pressure and reducing the work on the heart.
4. It causes an increase in the total amount of blood circulating through the body and increases the number of red blood cells and the amount of hemoglobin (matter which conveys oxygen to tissues), making the blood a more efficient oxygen carrier.

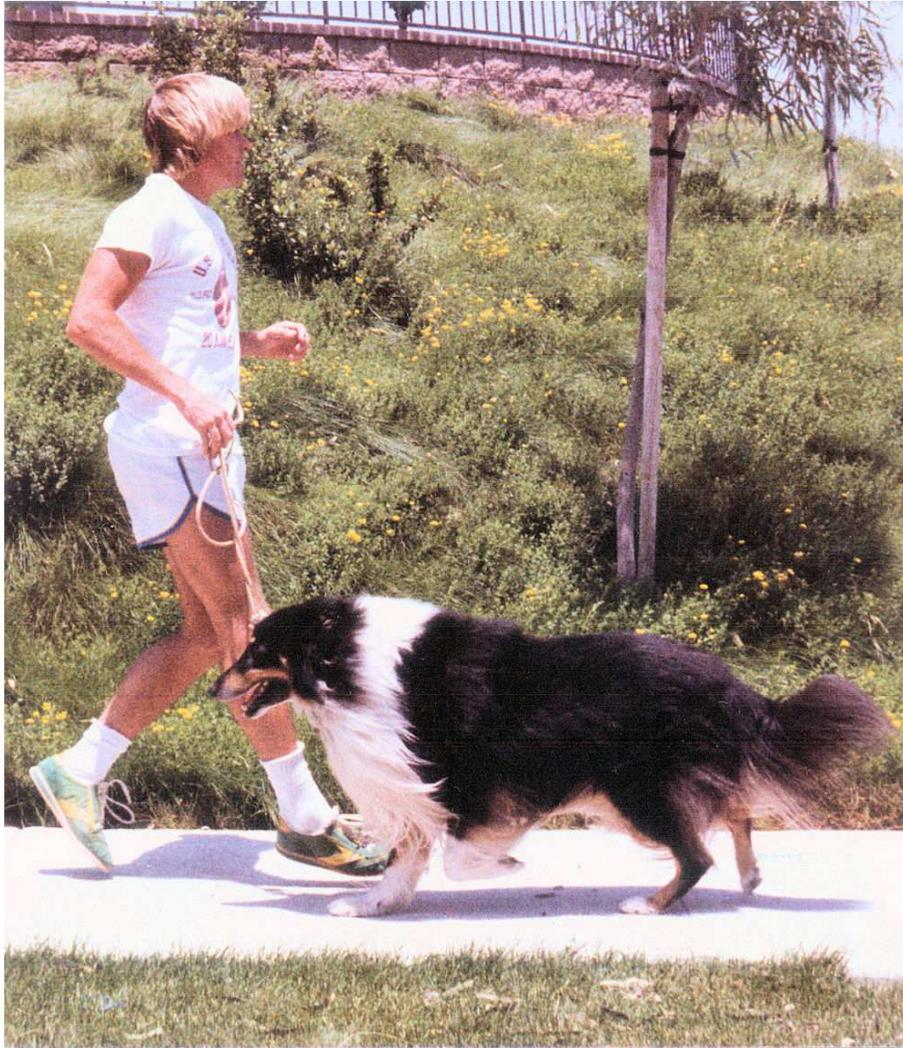
If you run backwards for one lap around the local track, you have done a respectable amount of aerobic training. Exactly how much aerobic training you do when you run one lap backwards depends on many variables. However, many athletes find one lap of backwards running to be equivalent to 8 laps of forwards running, and this seems to be a reasonable comparison. Some people find this hard to believe—until they try to run a lap backwards themselves! Most of the skeptics gas out and/or their muscles tighten up, forcing them to quit way before finishing the lap. The message therefore is

this: the first time you run backwards, expect to be unpleasantly surprised by how out of condition you are.

Tunney, as we recall, didn't run backwards each day for only one lap; instead, he ran backwards 4-8 miles, throwing jabs the entire distance. It's no wonder that he crushed Dempsey in the first title fight, and that Dr. Baron found him to be a "physical machine."

2. STRENGTHENS LEG MUSCLES—In general, a balanced and normal condition exists when your legs possess a 60-40 quadricep/hamstring strength ratio. (The quadricep is the muscle located on the front of the leg, between the knee and hip.) However, many athletes, especially long-distance runners, do not enjoy this balanced state in their legs; their quad/hamstring strength ratio is 50-50, 40-60, or worse. This comes about when long-distance runners and other athletes train by only running forwards, which overdevelops the hamstring muscle; they aggravate matters even more by neglecting to do any strengthening exercises for their quadriceps, such as backwards running or various weightlifting drills (knee extension, squats, etc.). With an overdeveloped hamstring muscle, the athlete risks pulling or tearing his quadricep; this is most likely to occur during situations when the quadricep is called into action, such as when one must run uphill or sprint. Other injuries, particularly knee injuries, can also result.

Backwards running does a sensational job of strengthening the quadricep, and is one of the few natural ways to bring about in your leg a balanced 60-40 quad/hamstring strength ratio. In forwards running the quadriceps can be strengthened by one's running up hills; but, that's no help for those of us living in the flatlands. As for the shin muscles, only backwards running seems capable of maximally developing them (remember: you're pushing off on your toes). In fact, most athletes don't even realize they possess shin muscles. They're there, though, just waiting to be exercised. Ed Schultz, a remarkable athlete, includes backwards running in his daily regimen for this reason. Once an AAU wrestling champion while attending the University of Pittsburgh, as well as the national field archery champion, Schultz now confines his athletic competitions to tennis tournaments. He's incorporated backwards running into his workouts for years. Says Schultz, "I like backwards running for my shins. The quadriceps also get quite a bit of a workout." This book contains several pictures of athletes who practice backwards running. If you look at these athletes' legs, you can see on most of them a well-defined shin muscle.



Paul Shaver and his dog Rex go through their daily workout. Shaver's clearly running on his toes, which is what you do when you run backwards. (Dr. Stevenson photo)

The calf muscles are also vigorously acted upon by backwards running. Steve Reeves, the famous bodybuilder and movie star of the 1950s, once needed to add more bulk and definition to his calf muscles for an upcoming Mr. Universe competition. So, he went down to the beach, and for a 2-month period ran 2 miles a day both forwards and backwards in the soft sand. At the end of the 2 months Reeves had gained 1½ inches on the back of his calves. What he got by running backwards was a pulling action, which was even more enhanced by the soft sand. This resulted in a tremendous cord and muscle separation on the back part of the leg. Needless to say, Reeves went on to win Mr. Universe.

It's no mistake to say that, with the exception of the hamstrings, backwards running strengthens all your leg muscles. Paul Shaver, an excellent athlete and college varsity tennis player, has found this to be the case. In fact, his experience with backwards running is rather unique. Shaver runs uphill backwards, which is a strenuous but relatively safe way of going about it. You really can't go fast enough to lose your balance. Uphill backwards running very quickly reduces about everyone to taking baby steps. It puts you through the ringer, that's for sure. In explanation, Shaver says, "I run uphill backwards for a distance of a quarter mile at the end of my daily running routine. Since I've been doing this, I've developed muscles in my legs which I haven't seen before." The leg muscles Shaver has developed by running backwards uphill are muscles forwards running hardly touch. "I find," Shaver points out, "that running straight forward works on one set of muscles, the hamstrings, but running backwards develops new muscles—the calves, quads, front thighs and shins."

Horace Blackley, who perhaps is the fastest backwards runner in the world today, contends that backwards running helps "*all* your leg muscles, because you're way up on your toes. And when you're on your toes, you build up your calf. You use about every muscle in your leg, including the quads. When you're going forward, you're not using quite as many muscles." Born in 1954, Blackley's a former high school sprint champion in Cincinnati. He runs every day, and his workout always includes a minimum of 1/2-mile of backwards running. Blackley runs backwards so fast it could properly be called backwards sprinting. He does it for enjoyment and the rewards of maintaining top physical condition. Notes Blackley, "A running backwards workout really tightens and strengthens your legs. You'll notice this especially the next day: when you go out to run, your legs give a lot more, and don't tire out. Running backwards really builds up your legs, and does the job a lot quicker than forwards running." The fact that backwards running really builds up your legs is evidenced by how you feel after you first take up the exercise. "When I first started," recalls Blackley, "my legs would just kill me. But, right now it isn't hard for me. I go faster than a lot of people go forward."

The prevention of knee injury, as well as the rapid rehabilitation of the knee after incurring such an injury, are direct spin-off benefits from this strengthening of the leg muscles which backwards running brings about. This fact must be mentioned in connection with Coach Al Feola of Fullerton College. Feola, who in 1975 set a world record in the 120-yard high hurdles



Horace Blackley, perhaps the world's fastest backwards runner, runs backwards past the finish line at the Fullerton College track. Blackley runs at least $\frac{1}{2}$ mile backwards every day. He says the exercise was tough at first, but now he runs backwards faster than most people run forward. (Dr. Stevenson photo)

in the 40-45 year age division, has practiced backwards running for 30 years; you'd be hard pressed to find a more knowledgeable advocate of the exercise. Feola coaches the hurdlers on the track team at Fullerton College, and also the defensive backs on the football team. He puts all his defensive

backs through tough backwards running sprint drills, a major reason being since the drills make the knee much stronger and more solid; after all, no football coach wants his players knocked out for the season by knee injuries. States Feola, “If a person received a knee injury, after the injury was completely healed, a good rehabilitation program for him would be to take up backwards running. By running backwards you're developing the muscles along the sides of the knees—that is, you're tightening the calves and the shins coming up the side. You're also building up the quads, and all this actually strengthens the knee. So, for a person who has bad knees, backwards running is an excellent strengthening exercise. Now, with our defensive backs, *every single day* we have all of them run backwards and do various types of turning and twisting drills—every day of the year.”

Once again, if you experiment on your own, you can actually feel how much easier backwards running is on your knees than forwards running. This is so despite the fact that backwards running more rigorously exercises the muscles connected to the knee tendons than does forwards running. It seems somewhat paradoxical that backwards running can tremendously strengthen the knee while being easy on it at the same time; but, that's been most athletes' experience with the exercise. Throughout this book we'll note such experiences of athletes.

3. IMPROVES QUICKNESS—We observed that Coach Feola has his defensive backs run backwards every day. One reason for this, we noted, is that backwards running strengthens the leg muscles, which in turn make the knee stronger. Another reason is that backwards running improves your quickness; and quickness is a must for a defensive back if he's to keep close to the receiver. The importance of this aspect of backwards running—that it makes you much quicker—has not been lost on several top athletes and sports experts. Dr. Ferdie Pacheco, who has worked in the corner of Muhammad Ali and hundreds of other boxers, says in his book, *Fight Doctor*, that “legs are the key to a fighter.” In training, continues Dr. Pacheco, some fighters “whose lives depend on leg speed also run like cornerbacks in football, backward for a stretch, then forward, then backward again. This is very wise because they are building up strength in the muscles they will use in retreat, as well as in the attack.” Sugar Ray Leonard and Muhammad Ali are two boxers noted for their leg speed and ability to slip punches. They both train for their fights by running backwards during their roadwork; as they put in their miles, they'll usually run backwards for short spurts. Training films of Leonard and Ali show

them doing this, and it's definitely a good practice; the boxer improves his quickness when he sprints backwards for short distances.

Boxers aren't the only athletes, however, who have improved upon their quickness by practicing backwards running. Roger Shepard of Fullerton College, who with tennis partner Eric Quade won the 1980 California Community College State Doubles Championship, attributes a lot of his success to the extra quickness and endurance backwards running provided him. During the 1980 season, for a 4-month period, Shepard and his teammates underwent a daily conditioning routine which can only be called excellent. This routine doesn't take all day, yet covers the most important elements of physical fitness. Relates Shepard, "Our tennis coach, Coach Breeland, put us on a backwards running program to increase our speed and build up our endurance. He had us run 1/4-mile backwards; we'd then run forwards for a while to get a rest before going back again to the backwards running for another 1/4-mile. We kept alternating between the backwards running and forwards running until we had run 1/4-mile backwards 5 times. At the end of our workout we sprinted backwards and forwards several times, each time for a distance of about 75 yards. All this we did each day." The effects of this workout on Shepard's physical condition were exactly what Coach Breeland had intended: quickness and endurance were greatly enhanced. According to Shepard, "the backwards running toned up my legs, and I noticed that I moved much quicker on the court. It definitely helped my speed, strength, and endurance." To win the State Doubles Championship, Shepard notes that "my partner and I had to play 4 or 5 matches a day. This required endurance, and that's what the backwards running had provided me; I couldn't have done it without the endurance and strength in my legs." Shepard and Quade, incidentally, were not seeded. Of course, the backwards running program was not solely responsible for Shepard and Quade's winning the State Doubles Championship; but, the evidence keeps mounting that there's a strong correlation between backwards running and victory in competition.

A couple of other characteristics of backwards running, ones we've already discussed but bear repeating, were detected by Shepard. He finds that "backwards running is very easy on my knees. When I do the forwards sprints or forwards running, my knees start to give out. But, the backwards running doesn't seem to affect them or jar them." Shepard also echoes the well-attested sentiment that backwards running really gives you a workout: "It's grueling. It burns off the calories, and I'd recommend backwards running for anybody who wants to lose weight."

Ed Schultz, who we recall likes backwards running for the way it exercises his shin muscles, also contends that the exercise has added quickness to his tennis game. He cites the example of the “short shot which you have to run forward to, followed by the lob which you have to rapidly get back for. That's where backwards running is a necessity.” In agreement with Schultz on the advantages of backwards running is his mixed doubles partner, Marilyn Palmer. Palmer especially likes the way backwards running exercises her quadriceps. The duo often run together; when it's time for a backward jog, Palmer will watch that Schultz doesn't run into anything, and he does the same for her. As we've mentioned, running with a partner is a good idea. The backwards running workout will be safer and more fun this way. Also, having another person along virtually ensures that you will complete the workout, even though it may be strenuous; no one likes to be called a quitter, and so most people rise to the occasion when there's an audience present.

We've now seen that backwards running can improve your quickness; there are still other ways in which the exercise can help you.

4. PROMOTES BALANCE—This section deals with two senses of the word balance: 1) balance as it means the uniform development of the body and its sets of muscles, and 2) balance as it means lending stability. Let us first see how backwards running promotes balance as it relates to the uniform development of the body and its sets of muscles.

One of the world's most innovative physical fitness authorities, Pat Murphy, practices backwards running; he recommends the exercise for several reasons, particularly for the way it develops complementary sets of muscles, leading to the balanced body. “You are trying to be the whole person,” observes Murphy. “You note that for every muscle that does a particular act there is a balancing muscle that can do that act in reverse. So, when you exercise in a certain way, you should think 'Why not exercise the opposite way?' The other sets of muscles which you know are present as a balance: why not work those sets of muscles as well as the forward sets? For example, if you do front curls, you should do reverse curls; if you run forwards, you should run backwards. Remember, there's always that counteraction which makes the balanced body. So, all those aspects that perhaps you've never looked into before, try them. Try them in the reverse and see what happens.” In 1977 Murphy took up backwards running, and this affected his weightlifting in the most wonderful manner. Explains Murphy, “My quarter squats went up from 400 pounds, where I used to



With companion Tracy Barnard at his side, fitness authority Pat Murphy runs backwards in the soft sand at the beach. Murphy, who weight lifts three times a week, credits backwards running for improving his squats from 400 pounds to 525 pounds! (Dr. Stevenson photo)

finish my workout at, to 500 and even 525 pounds; I experienced no aches and strain, *no problems whatsoever*. In my particular case, I know that incorporating backwards running into my routine was the only thing

additional; it wasn't a change in diet, more vitamins, or anything else. With me, you're talking about a person 41 years old who weighs close to 200 pounds, with a height of 6'1"; I've been weightlifting the last 18 years.”

We recollect that backwards running strengthens the quadricep, and this is the key muscle employed for squats; keeping this in mind, Murphy's dramatic improvement in his quarter squats makes sense. Emphasizing again the balancing role backwards running plays, Murphy states, “If backwards running wasn't complementary, then I'd drop it. But, it builds up those leg muscles you didn't have the use of before.” Murphy has two favorite places where he does his backwards running. One is at the beach where he likes to run backwards in the soft sand, just as Steve Reeves did. The other place, says Murphy, is “a stretch of dirt alongside the railroad spur near where I live. I do the backwards running on it because the soft dirt absorbs the shock of impact.” Both locations where Murphy runs are good choices: 1) they're away from cars, 2) in case you fall, the soft surface should prevent you from getting hurt; plus, you can't run very fast to begin with in soft sand or soft dirt, 3) since you're sinking in with each step, the soft surface makes you work that much harder; you therefore obtain an extra portion of the benefits provided by backwards running.

Balance, as has been mentioned, can also be thought of in terms of lending stability. Backwards running helps in this respect as well. For example, Coach Feola used to box in his college days, and was Golden Gloves champion of Southern California as a light heavyweight in 1951-52. Feola recalls how backwards running was incorporated into his boxing training routine and how it aided his balance: “We had a drill where we'd run the straightaways on the track forward, run the curves backward, run the straight-aways forward, and so on. We did that for 2 miles, and that drill really built all phases of stamina: it built the whole front of your legs, and your calves, too. Plus, it increased your *stand-in power*. Also, our trainer told us to punch and deliver blows while we ran backwards. So, we'd throw jabs and occasional right hands to learn to punch off balance—and it was really great.” By stand-in power, Coach Feola means the ability to go toe-to-toe against your opponent, delivering and absorbing blows without your being knocked off balance.

Another former boxer, Stan Jimez, also found backwards running helped his balance. Jimez belonged in 1948 to the 20-30 Club, an organization similar to Golden Gloves, and won the Middleweight championship for California that year. The roadwork portion of his training routine paralleled

Gene Tunney's, though Jimez didn't run quite as far backwards as Tunney did. Notes Jimez, "I used to run straight forward; and then one day I said, 'I'm going to start doing this backwards.' So, I started to run backwards, and soon worked up to running 2 miles a day backwards. The first day I could only go 200 yards backwards, but I was able to build up. As I ran, I'd throw jabs; when you run backwards, you find that it's much harder to throw jabs and keep them under control than when you run forwards." Jimez discovered that this training really comes in handy during a fight, especially as it relates to the balance factor. If the opponent knocks you off balance, he points out, "you can get yourself right back into position very easily. The backwards running while throwing the jabs allows you to *retaliate* in such a situation." Obviously, disaster awaits the boxer who can't handle being knocked off balance; so, neglecting to do the backwards running during training can prove to be a critical mistake.

Ignorant people sometimes made fun of Jimez while he ran backwards and threw jabs during his roadwork. This is a plight all backwards runners have faced at one time or another, and we'll discuss this in the next section; but, suffice it to say, Jimez adopted the proper attitude. "It never bothered me," he states. "I knew that my running backwards didn't seem right to a lot of the public, but it was awfully right to me because it made me feel good! In fact, I always felt *elated* after my workout."

To summarize this section, backwards running promotes a balanced body in that it develops complementary sets of muscles to the ones you normally condition during traditional forms of exercise. It also helps you maintain and recover your balance in situations where your opponent attempts to knock you off your feet; and where your opponent succeeds in throwing you off balance, the backwards running training makes you better able to cope with the situation. We'll now move on to the next section which shows how backwards running can enhance the quality of your life, and help you overcome all the negativism present in this world.

5. ENHANCES QUALITY OF LIFE—Backwards running, by getting you in top physical condition, enables you to live life more fully. Not long after starting a backwards running routine, you'll suddenly find yourself possessing much more energy and pep. This allows you to participate in enjoyable activities which your previous fitness level precluded you from doing. By engaging in these enjoyable activities your whole mental attitude towards life will improve. You'll be a happier person because now you can do and will do the things you've always wanted to do—go backpacking,

play in tennis tournaments, or whatever. The negative comments you hear every day from unhappy people will hardly affect you anymore. When these deadbeats say to you “You're too old to play tennis—you won't last a set” or “You're not in shape to go backpacking—the altitude will kill you,” you'll be able to just laugh off these comments; for the backwards running will have improved your level of fitness so much that you can reply with complete confidence to your detractors “Yes, I can do it—and you aren't going to talk me out of it!”

Pat Murphy, the previously-cited physical fitness authority, is one person who appreciates how backwards running enhances the quality of life. Since taking up the exercise in 1977, Murphy has found more time and energy to do things he really enjoys doing—such things as play racquetball and body surf. He also maintains that doing the backwards running makes him feel like a whole new person. Says Murphy: “Backwards running seems to rejuvenate me; it just has a completely good feeling about it. It's also shortened the warm-up time for my weightlifting workouts. Before I used backwards running, I spent a lot of time trying to warm up for the squats and other exercises directly connected with legwork. The advantage of the shortened warm-up is that it's provided me more time and energy for enjoyable living. Ideally, you want a program where you get your exercises done in the most limited time you want to expend. Backwards running seems to be the answer for cutting down on the time while still benefiting you.”

It's not just super fit people like Murphy whose quality of life will be enhanced by practicing backwards running, but the ordinary person as well. Many people think backwards running is only for the athlete, but that's a mistake. Backwards running is for anyone physically able to place one foot behind the other—and that's practically everyone. In fact, if anything, backwards running can most help the ordinary person; it can lift you out of the eat-sleep-work-watch TV rut which consumes so many people. It can totally transform your life for the better. Murphy states the case for the ordinary person taking up backwards running this way: “If you have a job where you're on your feet constantly during the day—and this covers a great percentage of the population—the first thing you're going to notice after taking up backwards running is that you have more spring in your step. The simple things: you won't have muscle fatigue in your legs at the end of the day. Most people come home from work and sack out in front of the TV; but, by instigating the backwards running routine, you'll now find the

energy to perform enjoyable activities. You'll be going out more after work, doing things like bowling or playing racquetball.”

One thing this book does is present you a choice: 1) you can read the book, set it aside, and say “That was interesting, but before I take up backwards running I'd like to see proof that it's beneficial,” or 2) you can take up backwards running today. In the words of Pat Murphy, you must decide whether you will be a looker or a doer. Lookers always demand proof and still more proof before they consider trying anything. Doers *recognize* proof when they see it, and act upon it. On several occasions people have asked me “What's so good about backwards running?” I've often responded by reciting chapter and verse the contents of this book, only to be greeted by the remark “Gee, it would be nice if you could prove backwards running's beneficial.” Such remarks are typical of lookers, for no amount of proof will ever satisfy them. We recall in the last section how some people gave Stan Jimez, the boxer, a bad time while he ran backwards during his roadwork. Generally, when you do your backwards running, it's the lookers who will give you a bad time. But, don't let their comments affect you. You're doing the right thing, while all they're doing is looking on.

Murphy has been subjected to more than his fair share of taunts and mindless questions while running backwards. As a result, he's developed strong feelings about people who do this. Murphy's observations on the matter contain many brilliant insights into human nature; in fact, what he says rates as a classic, and perhaps is the ultimate argument in favor of backwards running. Explains Murphy: “Man hasn't changed to this day. You have the lookers and you have the doers. When you're running backwards, the lookers are always the first to put in their little words of wisdom like 'Hey, the world's going around the other way!' or 'Do you realize where you're going?' When I pass people, they'll sometimes yell at me 'Why do you run backwards?' The easiest way to explain it, and not get too involved in a conversation, is to say 'I just wanted to see where I was, because I passed through so quickly.' It kind of gives them a little chuckle, if nothing else. But, the lookers are always the ones who want to know something, because while the doers are out there doing it, the lookers want to know 'why are you running backwards?' and 'what are the benefits?' And, if the reasons you give have any type of intellectual jab to them, the lookers might one day try it themselves. As the old saying goes: *too old too soon, too smart too late*. The lookers find out in their later years what they should

have been doing from the age of 15. They should have had backwards running incorporated into their daily living, so that it would have been just an ordinary regimen for their good health. They would have been out of the hospital, free from the doctors' visits. They would have been spending more time enjoying life, rather than telling you about their aches, pains, strains, shortcomings, operations, scars—all the constant negative things that people seem to take pride in talking about.”

Most of the time when you run backwards no one will bother you. This is because fellow athletes and joggers can see that what you're doing is hard work and no stunt. But, be prepared for occasional taunts and questions from onlookers; they're going to occur, and you're going to have to put up with them. The purpose of this section has been to prepare you for such situations; but, the most important message of this section is that taking up backwards running will make you a happier person in all respects. Once again, the reason for this is because you will now have more time and energy to devote to enjoyable living.

6. RESTORES GOOD POSTURE; ADDS VARIETY TO WORKOUT; PROVIDES SENSE OF ACCOMPLISHMENT—There are a few other benefits backwards running will confer on you. Ed Schultz, for example, found that the exercise significantly improved his posture. Mike Pulido, a long-distance runner who likes to run uphill backwards, agrees with Schultz. Pulido finds that this type of running “strengthens your legs and back. Your back is in an erect position when you're going uphill backwards, whereas you have a tendency to slouch and look at the ground when you're running forwards.” Scientific studies verify these observations of Schultz and Pulido; so, let's look at why backwards running can help your posture.

The internationally-famous back specialist and former gymnastics star, Dr. R. Manatt Martin, discussed with me one day the findings contained in his book *Cum Gravity*. There are 6 basic human posture positions, says Dr. Martin, and “ability to maintain the ideal erect posture requires physiological and anatomical employment of all the postures.” One of the 6 basic human postures—one which, unfortunately, most people hardly ever practice—is the extended posture, called extension. As defined by Dr. Martin, “extension is accomplished simply by bending your body backward. When you lean back and reach for the ceiling to relieve a cramp, you are in partial extension.” When you run backwards, you are also in partial extension; you're slightly leaning backwards (as the picture of Marilyn Palmer running with Schultz illustrates). Specifically, your

shoulders will be drawn back and you'll hold your head up; your back will be straight or somewhat concave, as is the case in the extended posture. Dr. Martin mentions several ways extension helps the body, most of them too technical for our consideration. He does, however, state this: "When you bend backward, each segment of the spine rotates on its transverse axis. Shifting direction of pressure on the spinal discs and the vertebrae allows physiological differences of function and effect to safeguard the body's structural health and form." Expressed in even plainer language, "long periods of extension tend to realign the vertebrae, relieve pressure on nerves, and heal in proper fashion." Of course, the longer you run backwards, and the more often you do it, the more you will be practicing the extended posture—and profiting from its protective action.

Most runners only run forwards, pounding their knees, back, and entire body every day. If these tremendous forces of compression acting on the body are not neutralized in some way, something has to give. This constant compression can be neutralized if one practices the less common posture positions, such as the extended posture; but, few people make any effort to do this. So, what gives is the body's ideal erect posture. The runner develops a swayback, droopy shoulders, off-angle head, protruding abdomen, and so on; serious injuries to the back, knees, and other areas may also occur. Many runners, genuinely worried about their swayback condition, believe that practicing the extended posture will only cause their swayback to worsen. Dr. Martin refutes this, saying: "The fact that most of those with lordosis (swayback) have never practiced extension to any serious degree, and yet have such a prevalent postural fault, gives proof that completely extending the spine does not cause lordosis." According to Dr. Martin, the solution to the problem of poor posture, and all the injuries which can occur as a result, is for you to daily practice exercises involving all 6 of the human posture positions. These exercises, he notes, will restore the suppleness to your spine, a suppleness you once had as a child, and straighten and beautify your body. One highly-effective exercise of the extended posture is backwards running. Even though it's not a common exercise since it entails an uncommon posture position, it's clear that your body's good health depends upon such uncommon exercises as backwards running.

Another benefit of backwards running is that it adds variety to your workout, giving you a psychological lift. In his case, says Schultz, "I like to put the backwards running in with the forwards running for variety, to take the monotony out of running." Forwards running mile after mile can get

awfully tiresome, especially when you do it every workout. Tossing in some backwards running never fails to break up the drudgery. For example, halfway through one of my favorite routes I reach a steep hill of about 100 yards in length; when I arrive at this spot, I turn around and run up the hill backwards. This really boosts my morale, and makes the second half of my workout “all downhill.” Mike Pulido, who we mentioned likes to run uphill backwards, is virtually addicted to the practice. Says Pulido, “Whenever I go running and come to a hill, I love to turn around and go up it backwards.” You'll notice throughout this book that backwards running practitioners often talk about the exercise as if it's a treat; to a large degree it is. Backwards running is tough physically, yet psychologically it's a lot of fun. At worst it's a change of pace, which is usually something we all can use.

The final benefit of backwards running which we'll bring up is that it provides you a sense of accomplishment. When you incorporate backwards running into your exercise routine, you will be doing something few athletes ever attempt. You will be joining that small elite of champions, such as Gene Tunney, who recognize how beneficial backwards running is, and who unhesitatingly utilize the exercise to their advantage. You will be doing an exercise that's not the easiest in the world, but one that does wonders for your good health. Along these lines, Horace Blackley recalls what made him take up backwards running: “I decided to run backwards because I noticed everybody always runs forwards. I thought that backwards running would be really hard, something hard to accomplish.” And, as Blackley stated earlier, backwards running was hard for him at first. But, he stayed with it, and is now one of the premiere backwards runners in the world.

Like Blackley, you can view backwards running as a challenge. But, once you accept the challenge and complete your first backwards running workout, you may come out a changed person; for you will have accomplished something of great value, whose benefits you will immediately feel. And hopefully, you will see that although completing a backwards running workout is an accomplishment in itself, backwards running can also help you accomplish many of your goals in life.

Having now listed and explained the benefits of backwards running, let us move on to a review of the history of this exercise.

GREAT FIGURES IN THE HISTORY OF BACKWARDS RUNNING

When we say that backwards running is a new form of exercise, we mean that few people have ever heard of backwards running, and therefore it is new to them. Actually, backwards running has been around for a long time. In this section we'll look at some of the all-time great practitioners and advocates of backwards running; their experiences with this exercise comprise a unique history, and contain many lessons for us to keep in mind.

It's been said that backwards running is as old as boxing. No doubt there's more truth to this assertion than not. For example, one of the original advocates of backwards running was William Muldoon. During the 1880s Muldoon was the world Greco-Roman wrestling champion; called “the solid man,” he defeated or held to a draw such wrestling legends as Strangler Lewis, Clarence Whistler, and “Professor” Sebastian Miller. In his prime Muldoon possessed a powerful muscular body, unusual in its day, though much like the ones found on today's highly-conditioned Olympic wrestlers. Muldoon did more than just wrestle; he also served at one time as chief trainer of John L. Sullivan, America's first great heavyweight boxing champion. In 1889 Sullivan had to defend his crown against Jake Kilrain. The champion hated to train, but Muldoon knew that he couldn't allow Sullivan to slack off; otherwise, Kilrain would probably win. As reported by the *New York Times* (June 3, 1933), Muldoon made sure that Sullivan trained for the fight:

The trainer awakened the champion at daybreak and ordered him to be ready for the day's grind at 7 o'clock. Sullivan roared with anger and refused to budge out of bed. Muldoon quietly left his friend's bedroom and returned with a baseball bat.

“I'm master here,” he told Sullivan. “You'll do as I say or take the consequences.” Sullivan, who had a profound respect for his trainer's strength and ability to take care of himself in a two-fisted manner, finally decided that it would be folly to oppose Muldoon's wishes.

Sullivan tired and was overcome by a strong thirst. He said he was going out to get a drink. Out came the baseball bat again and the Boston Strong Boy went back to the gym.

“If you drop that bat I'll knock your head off,” Sullivan raged. Muldoon threw down the bat and grasped Sullivan around the waist. They went to the floor and a wild rough and tumble bout ensued with Muldoon emerging the winner by more than a narrow margin. After that brief altercation Sullivan respected and carried out Muldoon's orders. Muldoon mixed diplomacy with his rather domineering tactics, but the results of his training campaign were apparent when Sullivan appeared in the ring a splendid specimen of physical manhood. Muldoon's forceful training methods were further justified when Sullivan won the fight and also the undisputed right to call himself the champion boxer of the world.

The fight against Kilrain proved to be an incredible spectacle. It went *75 rounds* (2 hours and 16 minutes), Sullivan finally winning by a knockout. Three years later in 1892 Sullivan lost his title, a title which he had held for 10 years; the challenger, Jim Corbett, knocked him out in the 21st round. For this fight, though, Muldoon did not serve as Sullivan's trainer—and this probably was the key reason why Sullivan lost. It's doubtful the champ entered the ring as physically fit as he did when Muldoon was around to make him train seriously.

Muldoon not only made the boxers he worked with train, but he knew exactly how to train them; in short, he was quite a physical fitness authority. The physical conditioning program Muldoon devised for his boxers was years ahead of its time. So advanced was this conditioning program that in 1926—*37 years* after the Sullivan-Kilrain fight—Gene Tunney could find no other regimen as beneficial; he therefore called upon Muldoon to help him train for his fight against Jack Dempsey. Part of Muldoon's program included backwards running. Tunney, we recall, ran backwards 4-8 miles a day, throwing jabs the whole way, while in training camp. Muldoon's program also specifically excluded rope skipping, which boxers have traditionally done without giving the matter serious thought. Tunney did not skip rope while training for his fights. We read in the *New York Times* (Sept. 7, 1926), “Before he went into the ring this afternoon, Tunney explained his system of training, which he has patterned and systematized after the teachings of William Muldoon, whom the challenger calls the smartest of them all in conditioning boxers. For instance, Tunney never skips rope.

Muldoon says the movements of a rope skipper are in no ways related to the boxer.”

When you skip rope, you jump straight up and down. When you box, you never jump straight up and down; you don't do it while throwing a punch, while avoiding a punch, or for any reason. During a fight, however, you do step backwards; you do this constantly, especially when your opponent presses the attack. Skipping rope does raise your heartbeat and help build up the cardiovascular system; but, you can do the same thing, if not a better job of it, by running backwards. Plus, by practicing backwards running you develop the necessary footwork and balance you will need in the ring. Muldoon realized this, and Tunney could see that Muldoon was right. So, what we had then was theory and application of theory. Tunney applied Muldoon's theory about how beneficial backwards running is as a conditioning exercise for boxers; he got in super shape, and went on to decisively beat Jack Dempsey for the heavyweight boxing championship. Upon Muldoon's death at the age of 88 in 1933, Tunney paid tribute to “the solid man,” stating in part, “William Muldoon was my friend. All I know about training I learned from him. His patience, intellectual courage and wisdom were inspirational.”

Backwards running, besides being a tremendous form of exercise, can also be looked upon as a sport. At the turn of the century Bill Robinson set a world record in the backwards running 100-yard dash; his time was an amazing 13.5 seconds! Robinson (1878-1949) was the perfect person to set the record. He was a famous tap-dancer, considered by many the greatest ever, and was much beloved by the public, who knew him by his nickname “Bojangles.” Robinson starred in several Broadway shows before pursuing a movie career. Between 1930 and 1939 he appeared in 14 motion pictures, the most popular being those in which he co-starred with Shirley Temple. In one of these films, *The Little Colonel* (1935), there's a famous sequence in which Robinson and the little girl dance down a staircase. At one point Robinson reverses direction and dances up the stairs *backwards*; so unique was this move that the stair tap is regarded as Robinson's most outstanding contribution to dancing.

Robinson was a generous, warm man, willing to help others; in fact, he appeared at an average of 400 benefits a year for charities and people in need. Once he came to the aid of Jesse Owens, who during the 1930s was the “world's fastest human.” Money had not come easy to Owens before he won his four gold medals in the sprinting events at the 1936 Olympics in



Bill Robinson and Shirley Temple dance up and down the stairs in “The Little Colonel” (1935). Robinson set the original world record for the backwards running 100-yard dash—13.5 seconds. He also took on Jesse Owens in a classic backwards running vs. forwards running match race. (The Museum of Modern Art/Film Stills Archive)

Berlin; it was, after all, the Great Depression. In any case, the friendship between Robinson and Owens resulted in a dramatic match race between the two. As reported in the *Cleveland Plain Dealer* (May 31, 1935), Owens was to sprint 75 yards forward while Robinson was to sprint 50 yards backward. No doubt the purpose of this exhibition was to raise money and publicity for Owens; Robinson, who made well over 2 million dollars during his career, needed neither. Whatever the reason, the race occurred. Owens overtook Robinson and beat him by four yards. This was a good showing for Robinson, though, especially since he was *57 years old* when this took place, whereas Owens was 22.

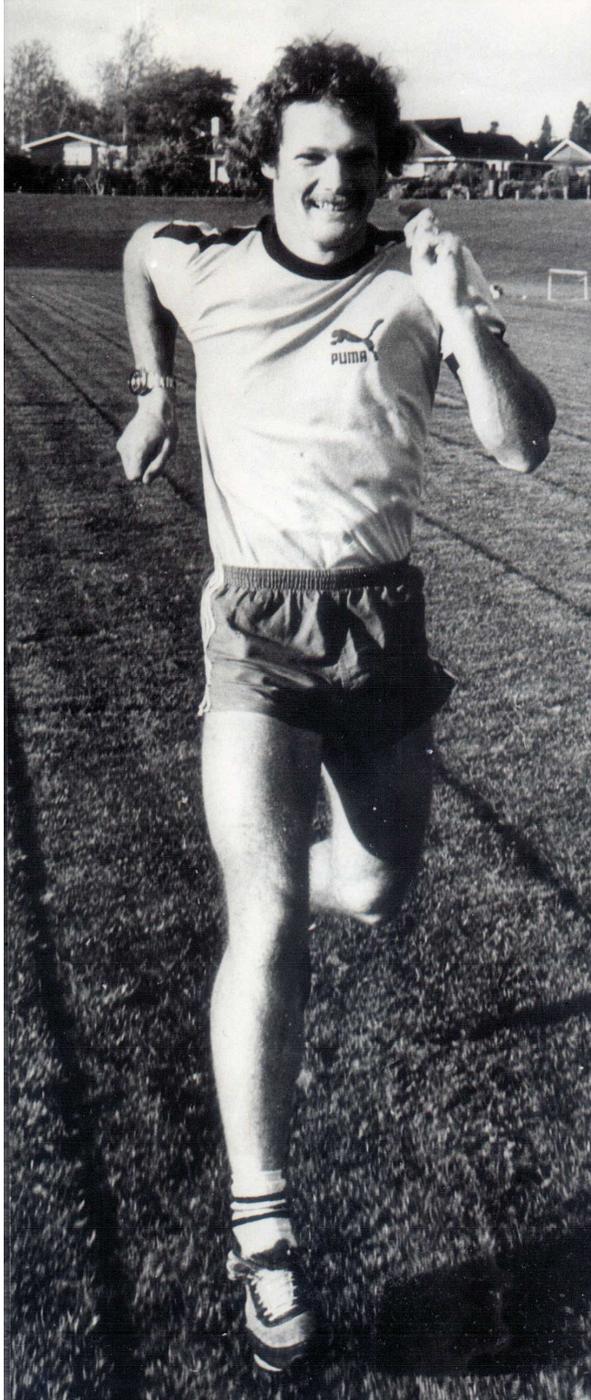
Robinson possessed an exceptional vitality; he required only 4 hours sleep each night. At age 62 his heart was tested to be equivalent to that of a man in his early 30s; his legs were rated like those of a youth. We shouldn't be too surprised by this. The man remained physically active during his whole life; plus, the evidence is strong he did so in a balanced way. Robinson incorporated backwards dance steps into his tap-dance routines, and certainly practiced backwards running enough to set world records in the sport as well as take on Jesse Owens.

We said that Robinson ran backwards for 100 yards in the record time of 13.5 seconds. One wonders about the accuracy of this time or the conditions in which the attempt took place. The reason for our doubt is because the *New York Times* (Nov. 26, 1949) reported upon Robinson's death that he also held the world record for running 75 yards backwards, the time being 8.2 seconds. 8.2 seconds corresponds to a time of about 11 seconds for 100 yards—unimaginable! Despite Robinson's obvious talent, it's hard to believe he could run backwards so fast; but, perhaps our thinking has been influenced by the results of recent efforts to break his backwards 100-yard dash record. Let us look at these recent efforts.

Robinson's official record time of 13.5 seconds for running 100 yards backwards lasted until April 10, 1977. On that day Paul Wilson of New Zealand ran this distance in 13.3 seconds. This new record occurred at the Hastings Highland Games in Hastings, New Zealand, but didn't remain on the books very long. Two years later (September, 1979) Wilson broke the record again—13.1 seconds for 100 yards and 14.4 seconds for 100 meters.

As reported in the *New Zealand Herald* (October 20, 1979), Wilson holds the New Zealand national junior 110-meters hurdles record; he teaches primary school in Waikato, which is located about 30 miles south of Auckland, and he holds the Waikato decathlon title (the decathlon is comprised of 10 separate track and field events). It's interesting to note the appeal of backwards running to athletes possessing multi-sport interests. Such people, perhaps intuitively at first, seem to recognize that backwards running helps make one the complete athlete.

Wilson was 19 years old when he set his first backwards running record; his most recent record was set in Tokyo, with Wilson running against 30 Japanese athletes. Hardly anyone was in attendance for the attempt since, states the *Herald*, the event “was intended solely for viewing on Japanese television.” It ended up being shown on a “record breakers” type of



Paul Wilson of New Zealand, the current world record holder for the backwards running 100-yard dash, displays his backwards running form. He set the record in 1979 in Tokyo, running the distance in 13.1 seconds. (*New Zealand Herald* photo)

program. In preparing for the record, Wilson worked out several times. Some of the drills he did each training session were: 1) he'd sprint backwards 60 meters at least twice, and 2) he'd sprint backwards the full 100 meters distance once. One speculates how the 30 Japanese athletes trained for the attempt; probably they just showed up for the cameras, adding a carnival touch to the spectacle. In any case, Wilson explains what backwards running technique he uses to train for and set his records: "I don't look over my shoulders, but try to keep straight through following the lines of the lanes." For speed this is how you would run backwards; for a safe conditioning workout, though, you definitely want to look over your shoulders from time to time, or work out with a forwards running partner who spots for you. Incidentally, Wilson adds that "running backwards can be quite tiring," which most certainly is what the 30 Japanese athletes found out, in case they didn't know already.

If anyone besides Wilson can break his current record, Horace Blackley of the U.S. is the one who can do it.

Blackley, the ultra-fast backwards sprinter we've met earlier, has probably shattered the record already—except no one has officially timed him in the process. I recall once trying to run backwards with Horace at the Fullerton College track. After half a lap I had to turn around and run forwards just to keep up with him. Two laps later Blackley opened up, putting on a reverse sprint that left me a mere forward sprinting spectator. This incident made me a believer, especially since I'm no average runner: I run 7-9 miles a day, which includes hill and backwards running. In short, Blackley is an awesome sight on the track.

Besides his daily backwards running workout, other factors contribute to making Blackley such an outstanding master of the exercise. For example, since 1971 Blackley has strictly followed the vegetarian diet, meaning he refuses to eat any junk foods or fat-laced animal products—foods which most Americans love to kill themselves with. Says Blackley, “When I started the vegetarian diet, I wanted to see if I could do it, see how strong my mind was. So, I stopped eating meat. About three months later I tried to eat a hot dog—and I spat it out! A lot of foods you eat today contain poisons. You read all the ingredients in them, and they mix up into a poison. Nowadays, instead of sending you off to war, they slowly poison you—and that cuts down your lifespan.” Misinformed people claim the vegetarian diet doesn't provide enough protein, and therefore one must consume animal products, or else lose strength. Blackley, somewhat in jest, offers to arm wrestle anyone who truly believes this nonsense. As the picture of Horace shows, he hardly suffers from a protein deficiency. However, what you can see in the pictures of Blackley are: 1) superior leg muscle development, particularly the shin muscles, calf muscles, and quadriceps; these are muscles which backwards running does a tremendous job of building up, as demonstrated by one example after another throughout this book; 2) excellent erect posture—another benefit of backwards running; 3) muscular upper body, with no trace of fat.

Another positive factor working for Blackley is that he's a black belt in karate; participating in this sport has taught him the importance of maintaining flexibility. Observes Blackley, “Every day I do all the stretching exercises for my running. They really help a lot. They keep me loose—I can do the splits—and I feel a lot better. I've done stretching exercises for the last seven years, since I started karate, and they've kept me more or less loose all the time.” Certainly the speed Horace generates and long strides he takes while running backwards around the track verify this.

Blackley does not run in competitions; he runs, as we said earlier, for personal satisfaction and to maintain his high level of fitness. Horace's value system reflects all the peaceful and good-natured elements found in the vegetarian philosophy; for this reason it would take a strong enticement to get him to "go after" the backwards running record. Blackley's laid-back attitude can be best appreciated when one observes the joy he derives from running with his 10-year-old daughter, Asantuwa. So, while Horace Blackley's name may never make it into the record books, remember what Pat Murphy says, that "you are trying to be the whole person." Blackley clearly has not lost sight of this goal, and therefore he's won greater rewards than records can ever provide.

These then are some of the greatest figures in the history of backwards running. We shall now focus in on the role backwards running plays in boxing, football, and long-distance running.

BACKWARDS RUNNING'S ROLE IN BOXING

We have already mentioned how backwards running helps boxers in several facets of conditioning. This section's purpose is to present additional evidence which demonstrates how vital backwards running can be for the boxer. As we note this evidence, let us keep in mind the wise observation of the famous 19th Century surgeon, Dr. James Esdaile: “Riches await the men of clear sense who know how to turn new truths to practical purposes.”

When you box, you are not always moving forwards. Quite often you are stepping backwards, backpedaling; this usually occurs when your opponent throws a punch and/or is pressing the attack. Now, if your legs aren't in condition to backpedal when necessary, you're going to be a sitting target—and that spells defeat in boxing.

Gene Tunney, who decisively beat Jack Dempsey in their first encounter, nearly lost the rematch one year later in 1927. Tunney came into the fight in even better physical condition than he had when he took away the championship from Dempsey in 1926; it's fortunate he did, since Dempsey finally got through the champ's defenses. In the 7th Round, the controversial “long count” round, Dempsey landed a long, wicked left to Tunney's jaw. As the *New York Times* reported (Sept. 23, 1927), this was “followed by a right to the jaw, and then another left—and Tunney toppled like a falling tree, hitting the canvas with a solid thud.” The referee refused to start the count until Dempsey went to a neutral corner; this provided Tunney extra time (about 5 seconds) to regain his senses. Some people maintain Tunney needed this extra time to recover; others, including Tunney, disagree. In any case, Tunney got back up on his feet at the count of nine. What happened next perfectly illustrates the value of backwards running workouts for boxers. We continue with the *Times'* coverage of the fight:

“On rising Tunney danced away from Dempsey's wild swings... Dempsey was wild in this crisis, a floundering, plodding mankiller, as Tunney, backpedaling for dear life, took to full flight, beating an orderly, steady retreat with only light counter moves in the face of the plunging, desperate, vicious Dempsey, aroused now for the kill.”

Tunney survived the 7th Round, returned the favor by flooring Dempsey in the following round, and easily retained his championship. Two things saved Tunney in the 7th Round: 1) the first factor responsible was his remarkable physical condition. Only a tremendously fit athlete could come back from being knocked down by Jack Dempsey the way Tunney did; 2) the second factor was Tunney's outstanding leg strength, which allowed him to backpedal and dance away from Dempsey when the situation called for it. Tunney, we recall, trained for his fights by running 4-8 miles a day backwards, throwing jabs the whole way. This showed real foresight, for Tunney had to revert to this drill after Dempsey knocked him down; if Tunney's legs had been weak, Dempsey would have moved in for the kill and put the champ away. But, as pictures of the fight plainly reveal, Tunney was able to backpedal and dance backwards, just as he had done in training; as a result, he successfully avoided Dempsey's punches. It's interesting to note Tunney's version of the fight and 7th Round (*Los Angeles Times*, Nov. 8, 1978): "That was the only round he won," said Tunney. "Everybody forgets that I knocked him down with the first punch of the next round. After the long count, which couldn't have been more than 14 seconds, I had a chance to exhibit my ring generalship... I was down but I wasn't 'out.' I could have gotten up at any time after that but I preferred to take the benefit of the full count."

Bill Parks is another former boxing champion who trained for his fights by doing various backwards running conditioning exercises. Parks, with an overall record of 73-2, was the Armed Services middleweight champion (165 pounds) in 1961; in 1963 he also won the Armed Services light heavyweight championship (178 pounds). Parks had several boxing coaches over the years while serving in the Army. One of them was Pat Nappi, coach of the victorious U.S. Olympic boxing team in Montreal. Nappi had Parks do backwards running drills. But, it wasn't just Nappi who advocated backwards running as a conditioner; all of Parks' coaches recommended it. Says Parks, "I don't think backwards running was anything Nappi instituted. It was just something he carried on because he knows it's beneficial."

Parks describes the daily regimen he and the other boxers he trained with followed: "We got up every morning and ran an average of 5 miles. We'd come back, have a steak and salad breakfast, no lunch, and then at 3 o'clock go work out in the gym. After the workout in the gym we went outside and ran wind sprints under the supervision of the coach. We ran them forward and backwards; we'd sprint 50 to 75 yards forward, walk that distance,

sprint it backwards, then walk, and keep repeating the process.” There were several reasons why the coaches had Parks and the other boxers do the backwards wind sprints; we've mentioned these reasons many times, but it never hurts to repeat them. Explains Parks, “What we were trying to do was to build stamina in our backwards movement, because a lot of time in the ring you're moving backwards. So, we worked on building up all the leg muscles, like the calf muscle, which help you move backwards. I can personally tell you that if your calf muscle is not in shape, you will get tired fast while boxing.”

Parks, like Gene Tunney, soon realized how beneficial backwards running is, and incorporated it into his morning roadwork as well. He didn't wait for scientific studies proving the value of backwards running as a conditioner; instead, he saw that the exercise helped him, and that's all the proof he needed. Recalls Parks, “I did a lot more backwards running than the coaches called for, because the amount of fighting that I did, my leg muscles needed the extra work. Also, I was a counterpuncher and I fought going backwards most of the time; that's how I fought best. So, when I ran my 5 miles in the morning, I'd always turn around and run backwards for a while.”

The backwards running drills Parks and Tunney did are ones any serious athlete can do; and most people have no problems doing easier versions of these same drills. If your sport requires you to step or run backwards, you would be wise to add sprinting backwards drills (or jogging backwards drills) to your training routine. You'll be practicing a foot movement you'll be called upon to make during competition; plus, your physical condition will really improve as a result.

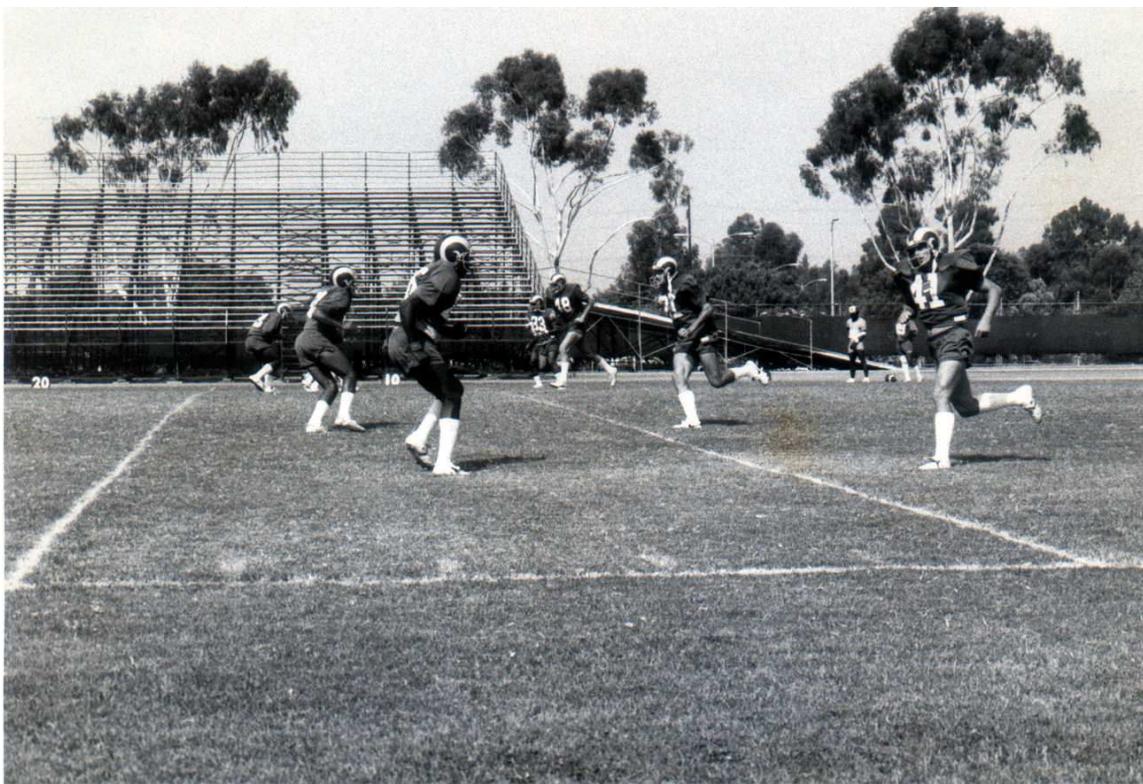
We shall now move on to our next section, and consider the very prominent role backwards running plays in football.

BACKWARDS RUNNING'S ROLE IN FOOTBALL

Most positions in football require the player to backpedal much of the time: defensive backs and linebackers backpedal to cover the receiver; quarterbacks drop back to throw a pass; offensive linemen take several steps backwards to protect the quarterback on a pass play; receivers often turn around and run backwards to catch an underthrown pass; running backs step backwards to avoid tacklers. All these backwards running foot movements occur constantly during a football game; it's not surprising therefore that football coaches put their players through various backwards running drills during practice. Let's look at a couple of these drills, and see how they help the football player.

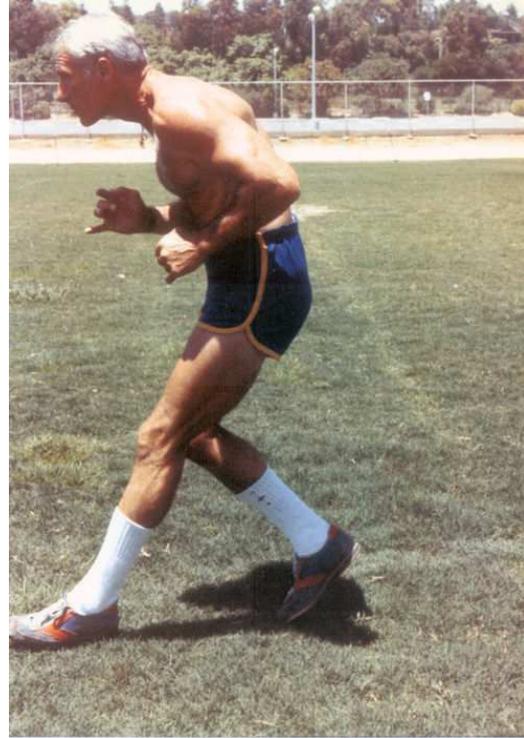
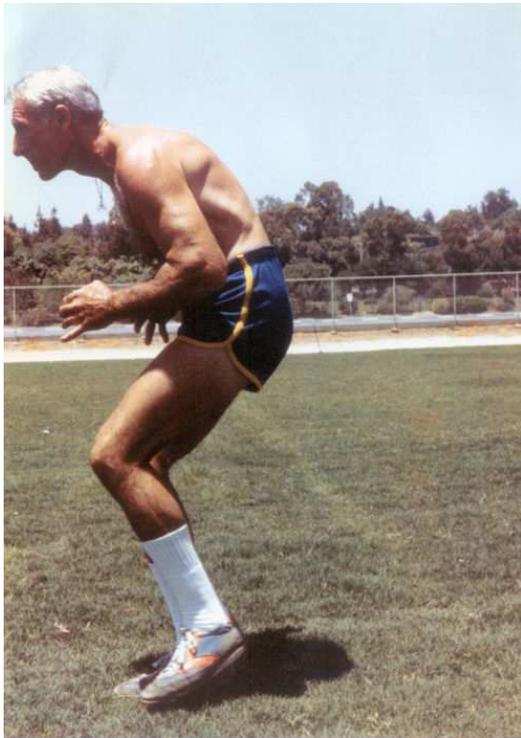
Defensive backs for the Los Angeles Rams do backwards running drills every day while in training camp. One such drill they generally practice right after the whole team has completed their stretching exercises. After the stretching, the team breaks up into several smaller units. The defensive backs congregate at one end of the field, and start their training routine by performing a short backwards drill which serves, among other things, as an additional warm-up. What the Rams' defensive backs do is this: about 5 defensive backs face 5 other defensive backs. The two groups are spaced about four yards apart. At the direction of the coach one group runs forward while the other group runs backwards. They run about 20 yards, stop, and reverse directions. The 5 defensive backs who had run forwards the first time now run backwards; the other group, which had run backwards the first time, runs forwards. The players go up and down the field, approximately 20 yards each way, 8 times or so.

The body position assumed by the Rams' defensive backs while running backwards is one defensive backs on any football team should master; it's also a body position basketball players should learn, since they'll need to use it while defending against the fast break. As we pointed out earlier, the traditional body position people adopt while running backwards is the straight up and down or slightly leaning backwards posture. This is a good body position for speed purposes, but it's not an ideal one for balance. In the case of the defensive back, it's critical that he maintain his balance; the receiver charges off the line, makes a cut or several cuts, and the defensive back must possess his balance to stay right next to the receiver as he runs



Defensive backs for the Los Angeles Rams do backwards running drills every day while in training camp. In one drill, pictured here, five backs run forwards toward five other backs who backpedal in the bent waist position. (Dr. Stevenson photo)

his pattern. At the snap of the ball, and if it's a pass play, the defensive back usually backpedals anywhere from 5 to 15 yards, depending on how far down the field the receiver runs before he makes his cut. What the defensive back wants is for his center of gravity to be low to the ground, so that he can easily shift directions when the receiver cuts to the inside or outside. Defensive backs therefore *lean forward at the waist* while running backwards. In this position their center of gravity is low to the ground. If, instead, they ran backwards in the traditional straight up position, their center of gravity would be very high, and they'd lose their balance most of the time whenever the receiver makes his cut. The picture of the Rams' defensive backs shows the ones who are backpedaling leaning forward at the waist. Of course, you don't have to be a defensive back to practice backwards running in this position; in fact, anyone who wants to run backwards to get in condition can profit from leaning forward at the waist while performing the exercise. This is because you can maintain your balance much better while in this position, which drastically cuts down on



Coach Al Feola of Fullerton College demonstrates the bent waist position football defensive backs must assume while backpedaling. Feola runs backwards every day (which he's done for 30 years), and does so in the bent waist position. In 1975 Feola set the world record for the 120-yard high hurdles in the 40-45 year age division. (Dr. Stevenson photo)

the chance that you'll ever fall down while running backwards. Also, your workout will be better (tougher) if you run backwards in the bent waist position; your upper body, by leaning forward and in the opposite direction from where you're running, is not leading the way as it is when it's slightly leaning backwards. So, your leg muscles have to work harder (which means they'll get stronger faster).

Coach Al Feola, who we recall has practiced backwards running for 30 years, runs backwards in the bent waist position. Says Feola, "I'll generally run 2 miles a day on the track. Out of that 2 miles, I'll run from 500 yards to a mile totally backwards. When I run backwards, I maintain my lean all the way—that's the important thing." The pictures of Coach Feola demonstrating his backwards running technique show this quite well; he's leaning forward at the waist, while still pushing off on his toes (which is what you do when you run backwards).

Coach Feola has been the defensive back coach for the Fullerton College football team for the last 20 years; during this time the football team has won several national championships in the junior college division, and is a perennial powerhouse. As we might expect, Feola puts his defensive backs through drills similar to ones practiced by defensive backs in professional football; he also teaches his defensive backs to run backwards in the bent waist position, just like the pros do. Explains Feola, “The first thing we have our defensive backs learn is to assume the correct position to back up. You have to lean forward at the waist, and you have to keep your shoulders *directly* over your feet as you run backwards. You must hold that position because if you straighten up, you're going to go off balance and break your stride. In one of our drills our defensive backs will run backwards from 10 to 40 yards, holding position the whole way. We'll do this 5 or 6 times. In another drill our defensive backs will turn from side-to-side while running backwards; we'll run backwards and turn to the right, turn to the left—we'll do this for 30 or 40 yards.”

You'll notice in the pictures of Coach Feola that he keeps his feet close to the ground while running backwards; you can see the Rams doing this, too. Keeping your feet close to the ground helps you maintain balance and also allows you to accelerate fast. Observes Feola, “To gain speed while dropping off, you should not lift your feet too far off the ground; the higher you lift your feet off the ground, the longer it's going to take to hit the ground. So, just skim along the top of the grass so you can get under way quickly.” Obviously, this is important for a defensive back who must not allow the receiver to race by. Feola makes another good point about how you gain speed in backpedaling: “*Push* off the balls of your feet, rather than reach back with your feet. A lot of people will reach backwards, but that's incorrect because your foot comes high off the ground. *Push, push, push*—to cover ground.”

The backwards running technique practiced by defensive backs and Coach Feola also takes into account proper arm placement. Note how low Coach Feola holds his arms; this promotes balance and a low center of gravity. He also keeps his arms very close to his body; this reduces air drag, and helps him maintain his speed. Feola states the case this way: “The carriage of your arms while running backwards is one of the most important things in gaining balance. Carry your elbows right at the hips—totally relax your wrist—but keep your arms compact, keep them inside. Do not put them out because that's a wind drag.”

Let us summarize the main elements of this backwards running technique practiced by Coach Feola and defensive backs:

1. Bend forward at the waist.
2. Keep your shoulders directly over your feet.
3. Keep your feet close to the ground—just skim over the surface.
4. Push off the balls of your feet.
5. Hold your arms low and very close to your body.
6. Carry your elbows right at your hips.

Running backs on the Rams do a short drill which involves both forwards and backwards running. It's a drill which looks easier than it actually is. Three plastic traffic cones spaced 1½ feet apart are placed in a straight line on the ground. The running back, taking extremely fast and choppy steps, runs a slalom-like course forwards, weaving in and out the cones. When he gets to the end, he reverses directions. He now takes rapid and choppy backwards steps, again following a slalom-like course, until he reaches the original starting point. The running back attempts to do this without knocking over any of the cones. What this drill does is enhance quickness and balance; it develops the necessary footwork a running back needs. Many athletes who try this drill for the first time are amazed at how many cones they knock over; they are dismayed to see how uncoordinated they actually are, and what poor balance they possess. Also, in attempting the drill these athletes usually display slow foot speed, especially when backstepping through the cones. This comes about from ignoring exercises, such as various backwards running drills, which develop the quadriceps, calves, and shin muscles—muscles which generate quickness and sudden bursts of speed.

Professional football players, of course, cannot afford to ignore such exercises as backwards running; they must possess quickness, balance, leg strength, and so on, or else selling real estate or some other occupation will become their new livelihood. It's for this reason that so many pro football players practice backwards running drills, often doing so on their own. One recent example of this is strong safety Jeff Delaney of the Rams. Delaney, who missed his rookie '79 season due to a severe bout of hepatitis, worked hard at restoring and improving upon his physical condition; he did so by

putting himself through a rigorous regimen of conditioning exercises, some of which included backwards running drills. Notes Bud Carson, the Rams' defensive coordinator (*Los Angeles Times*, Aug. 21, 1980), "I'd get to Rams Park (in Anaheim) at 8 in the morning and Jeff would be there, running, backpedaling, lifting weights. He'd still be there in mid-afternoon. He worked as hard as anyone ever has in the off season . . . and it paid off." Here we see Carson singling out backpedaling as an accepted and valuable form of conditioning. Again, this shouldn't surprise us; for most football coaches recognize the benefits of backwards running, and have devised drills based around the exercise.

If you play football, or plan on going out for the sport, try doing some backwards running as a way to get in condition and improve your footwork. The pros do it, and you know they wouldn't do it if there wasn't something to the exercise.

Let us now see the role backwards running can play in conditioning the long-distance runner.

BACKWARDS RUNNING'S ROLE IN LONG-DISTANCE RUNNING

Doing a lot of backwards running will rapidly get you in condition to run long distances. Incorporating backwards running into your conditioning program also reduces the chance you'll ever injure your knee. These are the two most striking ways backwards running benefits the long-distance runner, ways which we'll now investigate further.

Mike Pulido, who we recall enjoys running uphill backwards, got in condition for his first marathon in a mere 6 weeks. Before making the big effort, Pulido had run infrequently at best; a 10K race was his only previous running competition. It was obvious to Pulido that, especially with his limited racing background, he had to devise a unique training regimen if he were to get in shape for a marathon only 6 weeks away. What he came up with was a training regimen which had him: 1) running uphill backwards whenever he came to a hill, and 2) often running 4-6 miles backwards during his workouts. Pulido tells his story this way:

“I ran in the City of Orange Marathon back in January, 1979. At the time I was an engineering student at California State University, Fullerton, and had 6 weeks off between semesters. So, I decided to try to run a marathon at the end of that period. In those 6 weeks that I had, I ran at first no more than 2 or 3 miles a day. I then worked up to 7-10 miles every other day; during these workouts, whenever I came to a hill, I'd turn around and run up it backwards. About 2 weeks before the marathon I went on some fifteen mile runs, and anywhere from 4-6 miles of that I ran backwards. The 4-6 miles I ran backwards were mostly hills, and it took a long time; the whole workout would take 3 hours.

The backwards running was very tough initially; it was so tough I couldn't run backwards more than a few hundred yards at first. It was hard on the ankle and the joints in the lower portion of the foot, since you're on your toes all the time. But, I stuck with it, and soon my joints became very strong.

When I ran the marathon, I had hopes only of finishing. However, I did very well, and finished under 3 hours 20 minutes—this being my first and so far only marathon.”

Backwards running, obviously, cannot get everyone in shape in only 6 weeks to run a marathon. But, Pulido's experience once again illustrates: 1) the effectiveness of backwards running as a conditioner, and 2) backwards running's ability to drastically cut down on the time required for one to improve his level of fitness. As Pulido advises, "Don't laugh at anybody you see running backwards until you try it—because it's tough. Try running backwards in small portions initially, and you will see how beneficial it is."

Unfortunately, there will always be people who will laugh at you while you are running backwards. Sometimes, if the conditions are right, they will even boo you. This happened to me once during the 1979 Pigeon Pass Half-Marathon in Loma Linda, California. The moral of the incident, an incident which I'm about to relate, is that running backwards in training for a race is a much different matter than running backwards *during* a race.

The Pigeon Pass Half-Marathon was akin to every long-distance race I enter. With 100 yards to go the same thing always occurs: guys who had been loafing the whole way will suddenly launch a wild sprint toward the finish. The crowd goes crazy, thinking the sprinters have busted their guts out the whole race, so they cheer the hotdoggers. The truth of the matter is that a runner with enough energy to stage such a last ditch run hasn't been running hard enough during the rest of the race.

During the Pigeon Pass race there were two runners about a half-mile ahead of me at the ten-mile mark; I decided then to try to catch up with them, and forced myself to step up my pace. This was no frivolous decision. Already the course had burned me out; it contains eight killer hills, and an 85° sun blazed for the entire race. Since my idea of an honest effort is to run for keeps during the entire race, when I upped my pace, it was with the understanding that, once again, the crowd wouldn't see a sprint out of me—or possibly not see me at all!

The predictable occurred. With a half-mile to go I finally caught up to and passed the cruisers. But, come the last 100 yards, they roared by me, each one trying desperately to outkick the other, and leaving me high and dry. Perhaps something snapped inside me—I don't know. What I do remember is saying to myself, "Since everyone else is hotdogging it, as usual, why not do your own thing? Let's see if you can't finish this hellish race running backwards without falling down." It seemed like a refreshing idea; I'd been doing a lot of backwards running in training, and the insane

course and weather had so tired me I was curious to see if I could actually finish the race running backwards.

Well, I succeeded, but not before a chorus of boos rained down on me. The crowd despised me. You're supposed to sprint it out, or crawl in on your hands and knees, preferably with a contorted face—never make it look easy! The hot sun had clearly taken its toll on the race officials; at the finish line I was greeted by an angry “Turn around you! What's your number!” Don't ever make the oversight of pinning your number on the front of your shirt if you intend on finishing a race backwards; race officials frown on that.

Now, there were two reasons why I related this story. One reason was to demonstrate how it is that most people find it difficult to abandon their cherished misconceptions; and, when their bubble is threatened, they display their discomfort by booing, laughing at you, or other defensive behavior. If you ever wish to verify the old saying “Man is a creature of habit,” run the last 100 yards of a race backwards, and see how the crowd reacts. Reason #2: Doing backwards running in training got me in excellent condition for the race. I ran the half-marathon in 1 hour 33 minutes. This was a very good time for me, keeping in mind the adverse course and weather conditions, and the fact that I'm no super athlete. My good performance I mainly attribute to all the backwards running I had done in training. In the next section I list some suggested backwards running workouts you can do; these are ones I used in training for the half-marathon, and still do on a regular basis. For now it's sufficient to say that had I not incorporated backwards running into my training, I would have run the half-marathon at least 10 minutes slower; that's how much I personally feel the exercise benefited me.

Backwards running, as we've mentioned before, provides the long-distance runner substantial immunity against developing “runner's knee” (whose technical name is chondromalacia). Just about every serious long-distance runner has strained or injured his knee at one time or another. When this happens, the pain usually experienced is either: 1) pain on the backside of the kneecap; in this case the knee hurts especially when you walk down stairs or try running downhill; 2) pain on the outside of the knee.

The quadriceps muscle is the most important muscle in stabilizing the knee. Therefore strong front leg muscles, particularly a strong quadricep, will provide you a healthy or at least a less injury-prone knee. The common



A chorus of boos greets a jubilant Dr. Stevenson as he crosses the finish line at the Pigeon Pass Marathon. Such a reception is one backwards runners must learn to live with. (Marilyn Palmer photo)

element usually found in long-distance runners who develop “runner's knee” is that they possess weak front leg muscles and very tight back leg muscles (the worst culprit being over tight hamstrings). In other words, their leg muscle development is out of balance; complementary and opposing leg

muscles, which in this case are the quadriceps and shin muscles, have been neglected.

A typical high school or college cross country runner who is really “into” his sport will often run over 75 miles a week. He'll run 75 miles forwards, and not 10 feet backwards. Eventually, he develops “runner's knee” and wonders why. The coach tells him to do more stretching, while the doctor tells him to rest the knee. This advice is quite superficial, and at best only treats the symptoms; it does not come to grips with the cause of the knee injury. Once the knee is healthy again, the kid will resume his same faulty training routine which led to the knee injury in the first place. He'll run 75 miles a week, and not 10 feet of that distance will he run backwards. His hamstrings will get too tight again, while his quadriceps receive hardly any exercise, remaining very weak and unable to provide the knee much support. Soon the cycle repeats itself: “runner's knee” strikes the kid, putting him out of action once more, and possibly ending his athletic career.

In the years since I've taken up backwards running I've never developed any serious knee injury (which wasn't the case before I incorporated backwards running into my workouts). Nowadays whenever I feel the slightest twinge in my knee, I'll: 1) do knee extension repetitions (the weightlifting drill), and 2) base my workouts around backwards running, and cut way down on my forwards running. This regimen has never failed to chase away any knee twinges of mine. Coach Feola, we recall, puts his football players who've just recovered from knee injuries through a backwards running rehabilitation program. This is a commendable and wise solution to the knee-injury problem of athletes. It's a solution which works on a long-term basis as a preventive measure; it goes straight to the heart of the matter, reducing the risk factors which make one susceptible to knee injury.

Perhaps the most important thing to stress is that if you develop “runner's knee,” you don't have to wait for it to go away. There are some positive actions you can take which will force the injury to depart. For example, you can do the knee extension exercise, which strengthens the front leg muscles, the tendons in the knee, and the knee ligaments. When you do this exercise, concentrate on slowly letting down the weight, even if it feels like it weighs a ton; it's the resistive force you exert against the weight which is mainly responsible for the strengthening of the quads, knee tendons, and knee ligaments. The knee extension exercise is the best

weightlifting drill for the injured knee, and is highly recommended by most sports trainers. This exercise is *specific*, meaning it directly works on the injured area. You can also do backwards running, which is one of the best *nonspecific* exercises for the injured knee. By nonspecific, we mean that backwards running does not directly strengthen the injured area; it does help indirectly, though, by strengthening the muscles which support and stabilize the knee.

Adopt this regimen, and you will recover much sooner from your injury than if you had followed traditional advice. Psychologically you'll also feel better because you'll be keeping active by doing these exercises. You should feel absolutely no pain in your knee while doing the backwards running, and that fact alone should tell you that the exercise is good for it. The knee extension exercise also should not produce any pain in your knee, though you will definitely feel it giving the tendons in your knee a workout. Your knee will become stronger and more solid as you continue practicing these two exercises; once again, this is something you will be able to physically feel. So, you shouldn't have any trouble monitoring your progress.

Let us now move on to our section on suggested backwards running workouts. These workouts are appropriate for athletes trying to recover from knee injuries, especially the workouts which take place on soft surfaces. All of the suggested workouts are also suitable for their general conditioning benefits.

SUGGESTED BACKWARDS RUNNING WORKOUTS

We have found that backwards running helps you in many ways. Our list of the main physical and psychological benefits of backwards running shows that the exercise:

1. Builds Stamina
2. Strengthens Leg Muscles
3. Improves Quickness
4. Promotes Balance
5. Enhances Quality of Life
6. Restores Good Posture
7. Adds Variety to Workout
8. Provides Sense of Accomplishment

There are several backwards running workouts and drills you can do which will allow you to receive these listed benefits. Before we discuss these workouts and drills, it must be emphasized that there's one place where you should *not* do any backwards running: *don't run backwards in the street*. It's too dangerous! 99% of the time it might be safe, but 1% of the time something might go wrong. Ed Schultz once was running backwards in the street near where he lived. It was late at night and there was no traffic. As Schultz glanced over his shoulder, he noticed down the street a car backing out of the driveway. Schultz assumed the car would back out and then go forward, as is the case 99% of the time; so, he kept running backwards, oblivious to the danger. The car, however, continued backing up, coming down the street *in reverse* towards Schultz! At the last second Schultz heard the car and jumped up on the curb—just in time. He would have been run over had he stayed in the street. It turns out the driver of the car was backing down the street to pick up a neighbor; for some reason it was expedient for him to drive in reverse this way (probably so he wouldn't have to turn the car around again once he reached the neighbor's driveway). Schultz's experience illustrates how very possible it is that you

can get killed or seriously injured while running backwards in the street. So, avoid the street; it's not worth the risk.

Let us now look at some good backwards running workouts which are quite safe and relatively convenient.

TRACK WORKOUT—2 laps (1/2-mile) or more of backwards running.

Incorporate the equivalent of 2 laps (1/2-mile) or more of backwards running into your regular workout distance. For example, if your normal workout is 8 laps (2 miles) around the track, you can turn around after every 1½ laps of forwards running and run 1/2 lap backwards. Intersperse the backwards running as you please, but try to run backwards for a cumulative total of 2 laps or more; you'll really feel your front leg muscles and calves respond if you do this. Also, if you make the 1/2-mile or more of backwards running a regular part of your track workout, you'll be able to enjoy and maintain a higher level of fitness.

When you run backwards on the track, it's best to run in the outside lanes; you're pretty much out of everyone's way there. Be sure to glance over your shoulder occasionally to make sure no one's behind you, and that there aren't any objects on the track (like hurdles).

PARK WORKOUT—Run 1/4-mile or more backwards in soft, thick grass.

Find a park which has a good stretch of soft, thick grass; ideally the grass should be about 6 inches deep. Run backwards and forwards in this grass, mixing the two types of running as you wish. Try to run backwards for a cumulative distance of 1/4-mile; this is not as far as you should run backwards on the track, but it's just as challenging. It's comparable because your foot is sinking into the grass every step. If there isn't that much thick grass around, add difficulty to your workout by bending forward at the waist and run backwards like football defensive backs; try to run 1/4-mile backwards this way.

At the park beware of sprinkler heads, gopher holes, and other bad footing conditions. You'd be smart to first run forwards over the stretch you want to run backwards on; by doing this you detect most hazards, and can adjust your route accordingly. Of course, with thick grass you sometimes can't tell if the footing is going to be good until you land. If the footing turns out to be bad, and you fall down, at least you're falling into thick grass, and shouldn't hurt yourself. If the footing is good, though, you can

get in a fantastic workout! Running backwards in soft grass, with tall dark green trees and plenty of shade all around you, a gentle breeze blowing, and away from all the traffic and carbon monoxide: this is a workout which is hard to pass up!

At least once every week I go to a local park which has the soft, thick grass, tall trees, and lovely setting. There's a grassy hill at this park; the distance from the bottom to the top is about 60 yards. I run backwards up this hill 12 times, for a cumulative total of 720 yards. The grass is thick every step of the way. Naturally, the combination of running backwards, going uphill, and backpedaling in thick grass makes for a super tough workout. I perspire profusely and am often winded during this workout. But, I always thoroughly enjoy this workout; the running conditions are so perfect and the setting so uplifting, negative thoughts have trouble penetrating my mind. Plus, the tremendous sense of accomplishment I experience after completing this workout enhances my self-esteem and self-confidence. The picture of Ed Schultz and Marilyn Palmer shows them running up the same grassy hill I run on. If similar running conditions exist near where you live, take advantage of them; it's a first-class way to get in shape!

BEACH WORKOUT—Run 1/4-mile or more backwards in the soft sand.

Another pleasurable workout is to run backwards in the soft sand at a nice beach. Try to visit such a beach when there aren't many people (and their dogs) around; that way you can really let go and enjoy your workout, instead of worrying about having to dodge children or whatever. Run backwards in the soft sand for a distance of 1/4-mile or more. The sand can be either dry or wet from the tide, but be sure that the sand is soft so that your feet sink in.

For a variety of reasons it's impractical to run 1/4-mile backwards all at once in the soft sand. There may be rocks, seaweed, driftwood, the water, people, and other hazards you have to periodically avoid; this means you'll probably be looking over your shoulder more often than usual. Also, the nature of the workout is such that it's likely you'll want to turn around sometimes and run forwards just to catch your breath and reset your bearings. So, it's best to run backwards in the soft sand for 50-75 yard stretches at a time.

You'll find the fresh air at the beach invigorating, and you will perhaps be surprised at how far you can run before you begin to feel tired. When you do start to slow down, run on the hard, wet sand located nearer to the water. The going is much easier on this type of sand, and you can run forwards and backwards at a good clip here. One disadvantage, though, of running on the hard, wet sand is that you may have to dodge the water quite often; so, assess the tidal situation, and glance over your shoulder as conditions warrant.

Most people find running backwards in the soft sand easier than running forwards in this kind of sand. Remember, when you run backwards, you run on your toes; you pretty much land and push off on your toes. When you run forwards, you land on your heels—not the toes; you then roll your foot forward and push off on your toes. This is why forwards running is called heel-to-toe running. It should be apparent that you're not going to sink into the sand as much when you run backwards; this is because less surface area of your foot makes contact with the sand than it does when you run forwards.

If you want to attach a description to backwards running in the soft sand, call it a different kind of toughness from the tough workout associated with forwards running in soft sand. It's a different kind of toughness primarily because different (complementary) sets of muscles are involved when you run backwards.

As I've stated, these three suggested backwards running workouts are quite safe. If you fall down, the soft sand and thick grass can hardly hurt you. The track is hard, and you can bruise yourself there if you go down; but, the footing is very certain on most tracks, so it's highly unlikely that you'll ever trip. There's always the chance that on soft surfaces you might land wrong and twist your ankle; however, this can happen when you run forwards, too. Therefore if you do twist your ankle, it's not necessarily the fault of backwards running. Any injury which you might possibly suffer while running backwards will probably be due to chance or your own carelessness. What all this means is: if you take all the necessary precautions when you run backwards, the odds are very slim that any accident will occur.

You can run backwards for longer distances than those mentioned in the suggested workouts. For example, Ernest Connor of Harlem ran the entire 26 miles of the 1980 New York City Marathon *backwards* in 5 hours 40

minutes! But, you don't have to do miles of backwards running to gain outstanding physical health; runs similar to the suggested backwards running workouts will suffice.

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The stage has now been reached where all the main points about backwards running I originally set out to discuss have been covered.

The choice is now yours: 1) you can decide that backwards running is not for you, although possibly it might be something you'll want to try later on; or 2) you can take up backwards running immediately. As Pat Murphy observes, you're either a looker or a doer; and, to repeat the old saying: *too old too soon, too smart too late*. Lookers generally become doers after it's too late. So, consider this book as a manifestation of a golden opportunity—an opportunity for you to adopt a super exercise while you still have the time to derive and apply its enormous benefits. Backwards running has helped make champions out of regular athletes, and makes its practitioners happier, more physically fit persons. Give it a try, and you'll see that it can do the same for you.



With Marilyn Palmer acting as a pacer and spotter, Ed Schultz runs backwards uphill on a thick, grassy slope in Hillcrest Park in Fullerton, California. This type of park workout is hard to beat for its enjoyability and physical conditioning benefits. (Dr. Stevenson photo)

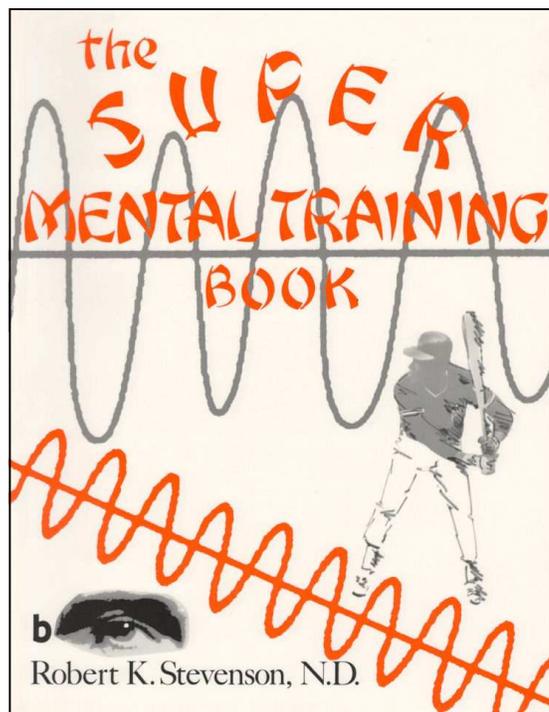
ABOUT THE AUTHOR

Dr. Stevenson is a life member of the American Running Association and National Health Federation, and presently serves as a mental training consultant for athletes.



In addition, Dr. Stevenson has authored five books, including *The Super Mental Training Book* which is available online. The product of 15 years of research, *The Super Mental Training Book* is widely regarded as the greatest sports mental training book ever written, and has been used as a textbook at the graduate department level in the California State University system. In this book one reads how many world-class and other athletes have used various mental training strategies such as self-hypnosis and visualization to achieve their full athletic potential, often winning championships and setting records in the process; complete details on how one can easily learn and apply these mental training strategies to one's own sport are provided. In short, *The Super Mental Training Book* contains indispensable information for any athlete who desires to significantly improve his athletic performance.

Look online for my book on mental training techniques:



POSTSCRIPT

Dear Reader,

Since my *Backwards Running* book first appeared in 1981, much has occurred to make backwards running a more widely-practiced and better understood form of exercise. This is evidenced by the large number of Internet websites relating to backwards running that presently exist. Some of the more notable backwards running websites are:

<http://www.backward-running-backward.com>

Edith and Christian Grollé of France have authored several books on backwards running as well as helped organize dozens of backwards running races throughout Europe. It is their goal to have the Olympics adopt one or more backwards running race distances as an official Olympic event.

<http://www.recordholders.org/en/list/backwards-running.html>

The title of this website is “World Records for Backwards Running.” One sees here backwards running world record times for both men and women for distances ranging from 100 yards to the marathon.

<http://www.runtheplanet.com/resources/historical/backwards.asp>

This website is titled “History of Backward Running.” Besides containing a brief history of backwards running, this site presents an extensive bibliography of 24 different scientific papers on backwards running.

<http://darkwing.uoregon.edu/~btbates/backward/backward1.htm>

This website contains an enlightening short paper, “Backward Running: Benefits,” by Dr. Barry T. Bates of the University of Oregon. Dr. Bates has thoroughly researched backwards running over the years, and concluded his above paper by stating in part: “In summary, our research has lead us to identify several benefits of backward running from a biomechanical perspective.”

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A video highlighting many of the beneficial backwards running drills that are described in my *Backwards Running* book is available at a discount from my website, <http://www.backwardsrunning.com>. Viewing a video of a backwards running drill is extremely helpful to the athlete because the athlete can immediately see and understand how the drill is to be properly performed; this saves both the athlete and his/her coach valuable time in getting the backwards running drill or workout properly incorporated into the athlete's training regimen. Indeed, if a picture is worth a thousand words, then a video is worth 10,000 words.

The backwards running video offered here shows various backwards running drills performed on the grass infield of a track, on the track itself, and also in a park. While all of the drills shown possess the broad application of enhancing one's level of physical fitness, some can be said to be geared specifically to football (though they would also prove useful for athletes participating in sports such as basketball, baseball, and soccer). In addition, some of the most important benefits of backwards running are discussed on the video by various world-class athletes and myself.

As a bonus, the video contains a half-hour interview of me in which I discuss my extensive research into how the regular use of various mental training strategies such as self-hypnosis and visualization can significantly improve one's athletic performance. Stories of world-class athletes who utilized mental training strategies to great advantage are related here. Also, what is considered the most powerful and effective mental training strategy for the athlete and how one can easily learn it is presented on the video.

Wishing you all my best in your enjoyment of the many physical, social, and psychological benefits of backwards running,

Robert K. Stevenson, N.D.

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